REMARKS/ARGUMENTS

The Applicants have carefully considered this Application in connection with the Examiner's Action and respectfully request reconsideration of this Application in view of the foregoing Amendment and the following remarks.

The Applicants originally submitted Claims 1-19 in the present Application. The Applicants have previously amended Claims 1, 6-8 and 13-14. The Applicants amend Claim 1 and 8 in the present Amendment. Dependent Claims 2, 7, 9, and 14 are cancelled without prejudice or disclaimer. Dependent Claims 20 and 21 are added. Accordingly, Claims 1, 3-6, 8, 10-13 and 15-21 are currently pending in the Application. Support for the present Amendment and new claims can be found on pages 14-15, paragraph [0034] of the present Application.

I. Formal Matters and Objections

The Examiner has stated:

> The listing of references in the specification is not a proper information disclosure statement. 37 CFR §1.98(b) requires a list of all patents, publication, or other information submitted for consideration by the Office, and MPEP §609.04(a) states, 'the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.' (See Examiner's Action, page 2.)

The Applicants wish to thank the Examiner for bringing this to the notice of the Applicants. The Applicants should be submitting a Supplemental Information Disclosure Statement, including a copy of the cited available references, to be filed with the present Amendment. Also, several references are now no longer incorporated by reference in their entirety, as amended in the Specification, above.

The Examiner has objected to Claims 7 and 14 under 37 CFR §1.75(c.) The Applicants have cancelled these Claims.

II. Rejection of Claims 1-19 under 35 U.S.C. §102

The Examiner has rejected Claims 1-19 under 35 U.S.C. §102(b) as being anticipated by "Optimizing Probe Selection for Fault Localization" by Brodie *et al.* ("Brodie").

Claim 1 is directed to a system for monitoring link delays and faults in an IP network. The system comprises a monitoring station identifier that computes a set of monitoring stations that covers links in at least a portion of the network. The system further comprises a probe message identifier, coupled to the monitoring station identifier, that computes a set of probe messages to be transmitted by at least ones of the set of monitoring stations such that the delays and faults in specific links spanning the set of monitoring stations can be determined, ***wherein the set of monitoring stations is a minimal set.*** (Emphasis added.)

Regarding Claim 2, now substantially incorporated into Claim1, the Examiner states:

"With respect to claim 2, Brodie discloses wherein said set of monitoring stations is a minimal set (4.2 Results, paragraph 3 – *'Although it is sufficient ... size of the probe set'* and figure 10)." (*See* Examiner's Action, page 3.)

Brodie, 4.2 Results, paragraph 3, states:

(iii) Number of Probe Stations:

Although it is sufficient to have just one probe stations, the interactions between probe paths increase if probe stations are added, and so the minimal probe set size decreases. Figure 10 shows the average true minimum set size for one, two, and three ***randomly placed*** probe stations. This confirms that adding probe stations reduces the network

> load imposed by probing. However, additional probe stations can be quite expensive, and the process may soon reach a point of diminishing returns where the cost of an additional probe station exceeds the benefit gained by reducing the size of the probe set. (Emphasis added.)
>
> According to Brodie:
>
> We begin by selecting from the n nodes a subset of k nodes as the probe station. ***In this work, we do not address the question of how to select the probe stations, since they usually cannot be chosen to optimize the probing strategy***; other considerations, such as gaining access to the machines, may be more important for choosing probe stations. (*See* Brodie, 3.1 Determining the Initial Probe Set; emphasis added)

The Applicants respectfully state that Brodie does not disclose or suggest the language of amended Claim 1. Brodie does not compute a set of monitoring stations that covers links in at least a portion of said network, ***wherein the set of monitoring stations is a minimal set.*** Instead, the cited passage of Brodie merely varies a number of probe stations to show variances of probe paths; no "minimal set" of monitoring stations are calculated. Indeed, Brodie is directed to how increasing the number of probe stations yields differing results ***when these probe stations are randomly placed***, and is simply not concerned about selecting a minimal set of monitoring stations, and the problem of selecting the probe stations are not selected. Indeed, Brodie *teaches away* from selecting a minimal set of monitoring stations and instead ***varies the number and the placement*** of the probe stations. Brodie simply does not a minimal set of monitoring stations as claimed in amended Claim 1.

Therefore, Brodie does not disclose each and every element of the claimed invention and as such, is not an anticipating reference. For similar reasons, Brodie does not disclose each and every element of independent Claim 8. Because Claims 3-5 and 10-12 are dependent upon Claim 1 and 8, respectively, Brodie also cannot be an anticipating reference for Claims 3-5 and 10-12.

Accordingly, the Applicants respectfully request the Examiner to withdraw the §102 rejection with respect to these Claims.

Regarding independent Claim 6, the Examiner states that Brodie discloses: "a probe message identifier, coupled to said monitoring station identifier, that employs polynomial-time approximation (2.1 Problem formulation, paragraph 1 and 5. Related work, paragraph 3)." (*See* Examiner's Action, page 4.)

These passages of Brodie state, respectively:

> Finding the minimal set of probes requires answering the following questions: (1) Which probes are available as "candidates" for use in a network? (2) Which faults can be successfully identified by a given set of probes (3) What is the smallest number of probes that can identify the same collection of faults as a given set? Suppose the network has no nodes. Each probe is represented as a binary string of length n, where an 1 in position j denotes that the probe passes through node Nj. This defines a dependency matrix D(i,j), where D(i,j)=1 if probe Pi passed through node Nj, D(i,j)=0 otherwise. D is an r-by-n matrix, where r is the number of probes. (This formulation is motivated by the "coding" approach to event correlations suggested by [8].) [Paragraph "1"]
>
> N1's column in the dependency matrix is unique. However, as explained above, a failure in N2 cannot be distinguished from a failure in N5, and similarly a failure in N3 cannot be distinguished from a failure in N6. Although N4's column is unique, a failure in N4 cannot be distinguished from no failure anywhere in the network, because there is no probe passing through N4. Adding an extra "node" whose column is all zeroes, representing no failure, avoids this technicality. [Paragraph "5"].

And "Related Work", paragraph [0003] states:

> The approach in [6][I. Katzela and M.Schwartz. Fault Identification Schemes in Communication Networks, IEEE/ACM Transactions on Networking, 1995] uses a graph model in which the prior and conditional probabilities of node failures are given and the objective is to find the most likely explanation of a collection of alarms. It is shown that the problem is NP-hard and a polynomial-time approximation algorithm is given; the performance of this algorithm can be improved by assuming that the probabilities of node failure are independent of one another. ***Using the dependency matrix formulation enables us to take a more straightforward approach which does not require searching the space of possible explanations for a set of alarms.*** Using this approach probe sets can be found

which are constructed to locate precisely those problems one is interested in detecting. (Emphasis added.)

The Applicants respectfully state that Brodie does not disclose the invention of Claim 6, and respectfully traverse characterizations of Brodie made by the Examiner. The above passages of Brodie are directed to dependency matrix formulations, not to employing a polynomial-time approximation to compute a set of probe messages to be transmitted by at least ones of a set of monitoring stations. Indeed, there is a teaching away from the use of polynomial-time approximations, as Brodie *disparages* an employment of a polynomial time approximation algorithm in [6], and *instead* employs "a more straightforward approach" of dependency matrix formulations.

Therefore, Brodie does not disclose each and every element of the claimed invention of Claim 6 and as such, is not an anticipating reference. For similar reasons, Brodie does not disclose each and every element of independent Claims 13 and 15. Because Claims 16-19 are dependent upon Claim 15, Brodie also cannot be an anticipating reference for Claims 16-19. Accordingly, the Applicants respectfully request the Examiner to withdraw the §102 rejection with respect to these Claims.

III. Conclusion

In view of the foregoing amendment and remarks, the Applicants now see all of the Claims currently pending in this Application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1, 3-6, 8, 10-13, and 15-21.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present Application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 08-2395

Respectfully submitted,

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